1-1-1993

A comparison of the hypnotic experience between signing deaf and hearing subjects.

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A COMPARISON OF THE HYPNOTIC EXPERIENCE BETWEEN SIGNING DEAF AND HEARING SUBJECTS

A Dissertation Presented by

by

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Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 1993

School of Education

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ACKNOWLEDGMENTS

I would like to express my thanks to the following people without whom the completion of this project would not have been possible.

To my advisor and committee chair, Dr. William J. Matthews, for his ongoing support, encouragement and expertise. His unique style of motivation facilitated a successful and enjoyable doctoral experience for me. I could not have had a better advisor.

To my dissertation committee members, Drs. John Carey, and Karen Helfer for their help in seeing me through the dissertation process with as little discomfort as possible.

To my sons, Robert (BJ), and Joseph, who have tolerated the demands of graduate school made on their mother for four years. Without their support I could not have completed this endeavor.

A special thanks to my husband, Dr. Richard Isenberg, who has been a constant source of support and encouragement throughout the doctoral process. It has been his unwavering willingness to maintain the homefront, at times as a single parent, with kindness and humor that has not only allowed me to achieve my academic goals, but has also kept our family healthy and happy.

ABSTRACT

A COMPARISON OF THE HYPNOTIC EXPERIENCE BETWEEN SIGNING DEAF AND HEARING SUBJECTS

MAY 1993

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Hypnosis has traditionally been a therapeutic tool for hearing clients. This has not been true for deaf people. Though it has long been accepted that hypnotic response can occur with eyes open focused on visual stimuli, few have considered this technique a viable tool to be used with clients who cannot hear.

The purpose of this study was to compare the hypnotic susceptibility of deaf and hearing as well as male and female subjects. This comparison focused on the responses of subjects to hypnotic suggestions presented through visual rather than auditory receptors. It was hypothesized that male and female, deaf and hearing subjects would show no significant difference in hypnotic susceptibility.

A multiple analysis of variance (MANOVA) was conducted on five dependent measures used in this study. These were the Stanford Hypnotic Susceptibility Scale Form C, (SHSS:C) (Weitzenhoffer and Hilgard 1962), subjects' self-report of hypnotic performance and overall trance depth, and a rapport

and resistance scale measuring attitudes of subjects toward the hypnotist. A chi square item analysis of the SHSS:C comparing overall responses of the original SHSS:C norming population and the total signing group sample was completed.

As predicted, results of the study failed to find any statistically significant main effects or interactions between deaf or hearing subjects on any of the dependent measures. There were also no statistically significant main effects or interactions between male and female subjects on all but one measure, self-report of trance depth. Males were found to report feeling less in trance than did female subjects.

Results of the Chi square SHSS:C item analysis revealed no statistically significant differences in overall ideomotor responses between the SHSS:C norming population and the total signing. However the total signing group tended to positively respond significantly more often to three cognitive distortion/fantasy suggestions i.e., Dream, Anosmia to ammonia and Amnesia, than did the SHSS:C norming population. This may be due to the visual imaging abilities of people who sign.

It is concluded that deaf subjects with regard to gender do not differ in hypnotic susceptibility from hearing subjects. It is also concluded that those who receive hypnotic induction and suggestions through sign-language demonstrate equal and at times greater susceptibility.

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CHAPTER I

INTRODUCTION

Hypnosis has traditionally been a therapeutic tool for hearing clients. This has not been true for deaf people. Though it has long been accepted that hypnotic response can occur with eyes open, focused on visual stimuli, few have considered this technique a viable tool to be used with clients who cannot hear. Those who have reported using hypnosis with deaf people have generally restricted their discussions to single case clinical examples, (Bartlett 1966, Bowman and Coons 1990, Gaston and Hutzell 1976, Gravitz 1981 and Isenberg 1988). Though case presentations have been dramatic and interesting there is a need to study individual differences in susceptibility to hypnosis among deaf people as with their hearing counterparts. Do deaf people as a group respond to hypnosis in a like manner? Can they experience visual and taste hallucination, as well as age regression, and anosmia? Are the hypnotic responses of deaf people unique to this population or are they a result of visual communication? It is important to examine these questions if professionals are going to be using this technique in their clinical settings.

Purpose

The purpose of this study was to compare the hypnotic susceptibility of deaf and hearing subjects. This comparison focused on the responses of subjects to hypnotic

suggestions presented through visual rather than auditory receptors.

Problem Statement

The following null hypotheses were tested:

1. No significant difference in hypnotic susceptibility on the Stanford Hypnotic Susceptibility Scale form C, (SHSS:C) will be measured between group (deaf and hearing), or gender.
2. No significant differences will be measured between group (deaf and hearing), or gender on self-report performance measures.
3. No significant differences will be measured on the depth of trance self-report between group (deaf and hearing), or gender.
4. No significant differences in rapport with hypnotist will be measured between group (deaf and hearing) or gender.
5. No significant differences in resistance to hypnotist will be measured between group (deaf and hearing) or gender.
6. No significant differences will be measured between communication mode, e.g., ASL, PSL, or SEE and resistance to hypnotist.
7. No significant differences will be measured between communication mode and rapport with hypnotist.

8. No significant differences will be measured on SHSS:C items between either deaf, hearing, male, female, or total signing subject sample and the original SHSS:C norming population sample.

Limitations of the Study

1. This study was limited to those deaf and hearing people who communicate manually, via sign language. It would be difficult to generalize findings to deaf people who communicate in a different manner, e.g., orally, cued speech, etc.

2. This study was limited by direct communication between hypnotist and subjects. It may not be possible to generalize findings to those who would receive hypnotic induction indirectly via an interpreter. Results from this study may, however, provide a framework from which further research considering hypnosis with signing interpreters can be accomplished.

3. This study was limited by total subject size. One research goal was to provide a norming sample of deaf and signing subjects. With a population sample of 51 this was not accomplished. Therefore it may not be possible to generalize results beyond this study.

CHAPTER II

LITERATURE REVIEW

Hypnosis with Deaf People

In the last 30 years there have been few empirical studies regarding the use of hypnosis with deaf people. Though Bartlett (1966), Bowman and Coons (1990), Gaston and Hutzell (1976), Gravitz (1981), and Isenberg (1988) have presented single case reports using a variety of non-vocal hypnotic approaches to their deaf clients, only Martorano and Oestreicher (1966), Matthews and Isenberg (1992), and Isenberg and Matthews (1991) have attempted to examine trance effects on deaf people in a systematic way.

Case presentations published in the past 30 years have illustrated a variety of hypnotic technique adaptations used with this population. For example, Bartlett (1966) used pantomime, stroking and arm catalepsy by lifting the arm of a deaf female dental patient to produce relaxation and trance. Gravitz (1981) described how he incorporated hypno-therapeutic relaxation techniques such as optical fixation on the therapist's hand, vibratory stimuli, light shoulder pressures, arm stroking, and manually facilitated air currents when working with a brain-damaged centrally deaf female patient. Bowman and Coons (1990) reported that a "hypnotic trance was induced by instructing the patient in muscle relaxation, modeling relaxation with exhalation, and having the patient focus her gaze on the hypnotist

repeatedly fingerspelling R-E-L-A-X. Isenberg (1988), described how she communicated via sign language, Ericksonian indirect suggestions and guided fantasies with a deaf client.

Martorani and Oestreicher (1966) were the first to empirically examine trance induction with this population by attempting to hypnotize twelve deaf subjects selected from a psychiatric inpatient unit. Subjects had a range of diagnoses including chronic schizophrenia, psychosis with mental deficiency, and severe adjustment reaction. The researchers in this study used a rotating disc with a black and white spiral focal point. Each subject was to look at the lighted spiral as it rotated in a darkened room while the hypnotist manually communicated relaxation, eye-lid closure, and eye catalepsy.

Results from this study were inconclusive. Though the researchers found that some subjects were able to achieve an initial "light" hypnotic state, trance deepening was negatively affected by eye closure, communication mode, e.g., manual sign language versus lip reading, and active hallucinations for some subjects. The authors concluded that at the time of the study, hypnosis was not a viable therapeutic tool.

Matthews and Isenberg (1992) compared the hypnotic experiences of 18 hearing undergraduate women from the University of Massachusetts with 17 deaf undergraduate women from Gallaudet University. Subjects were randomly assigned

to one of two induction techniques, the Indirect Hypnotic Suggestion Scale (ISS) adapted from an induction procedure presented in Erickson, Rossi, and Rossi (1976) and utilized by Matthews, Bennett, Bean and Gallagher (1985), and the Stanford Hypnotic Clinical Scales for Adults, (Morgan and Hilgard, 1978).

Trance induction and suggestions were received auditorally by hearing subjects and visually, in sign language by deaf subjects. Five dependent measures were used in this study: (1) the five item objective measure of the SHCS; (2) a self-report measure in which subjects rated their own performance on each of the five SHCS items on a 7 point Likert-type scale; (3) a 7 item rapport scale in which participants rated their experience of rapport with the hypnotist on each suggestion; (4) a 7 item resistance scale in which participants rated their feelings of opposition to the hypnotist on each suggestion; (5) a self-report rating of the participant's subjective experience of level of suggestibility on a 7 point scale. Subjective response forms were adapted for deaf subjects by changing auditory references to visual ones. An example of this adaptation from the resistance scale is "When I heard the suggestions a part of me felt resistant" (hearing subjects) to "When I saw the suggestions, a part of me felt resistant" (deaf subjects).

Results of the Matthews and Isenberg study (1992) showed no significant differences in behavioral responses,

five item self-report measure of subject responsiveness, rapport scale or self-report trance depth between deaf and hearing subjects. Behavioral data indicated that deaf subjects showed at least a moderate level of suggestibility as compared to hearing subjects.

It is difficult to generalize the results of the Matthews and Isenberg study (1992) for several reasons. First, is the problem of sample size. With only 35 subjects it would have been statistically difficult to reject the null hypothesis resulting in a type II error. A second problem concerns communication differences between hearing and deaf participants. Though each subject was hypnotized via their primary mode of communication and language, comparisons of responses to auditory versus visual stimuli may be incompatible. This is illustrated by trance indicators exhibited by subjects in the Matthews and Isenberg study (1992). Isenberg and Matthews (1991) point out that deaf subjects changed the manner in which they signed when in trance, e.g., slowing hand movements, expanding the signing field, difficulty raising hands up to sign. The authors speculated that these "shifts in signing style" were comparative to hearing subjects who, while experiencing hypnosis, altered their speech rate, tone quality, and speech production effort. Though this comparison may appear face valid, further data is needed to verify the authors' theory.

Hypnotic Susceptibility: Male Versus Female

A third issue that was not addressed in the Matthews and Isenberg study (1992) was that of differences among deaf subjects themselves.

> "Questions regarding male and female hypnotic responses among deaf subjects... etiology and onset of deafness along with signing mode, i.e., American Sign Language (ASL), Pigeon Sign Language, or Sign English, may be variables affecting the hypnosis experience" (pg 20).

There seems to be inconsistent data regarding past research on the hypnotic susceptibility of male versus female subjects. Weitzenhoffer and Weitzenhoffer (1958), used the Friedlander-Sarbin (1938) scale to examine how the sex of both the hypnotist and subjects impacted the hypnotic susceptibility of subjects. They found that neither hypnotist's sex, subjects' sex, nor the interaction of these variables produced significant differences on subjects' hypnotic responses. D'Eon, Pawlak, Mah, and Spanos (1979), also looked at hypnotists' and subjects' sex affect on hypnotic susceptibility. Using a 2 X 2 factorial analysis of covariance, subjects' response to the Stanford Hypnotic Susceptibility Scale Form C (SHSS:C) (Weitzenhoffer & Hilgard, 1962) was assessed. The researchers used the Harvard Group Scale of Hypnotic Susceptibility, Form A (Shor & Orne, 1962), Absorption Questionnaire by Tellegen and Atkinson (1973) and the "Willingness to Cooperate in

Hypnosis" scale by Spanos, McPeake, and Churchill (1976), as covariates to "Maximize the sensitivity of our statistical analysis to group differences" (pg. 1233). D'Eon, et.al.. (1979), reported results similar to those of Weitzenhoffer and Weitzenhoffer (1958).

In contrast, Alman & Carney (1980), found female subjects more successful in producing posthypnotic behavior when suggested through an indirect hypnotic method. Matthews & Mosher (1988), examined sex of subject, indirect versus direct method of hypnotic induction and suggestion in a 3 way factorial analysis of variance (ANOVA). Results of this study failed to show any significant statistical differences in behavioral responses between males and females. They did however state, that females reported experiencing more of the hypnotic suggestions than did males. The researchers felt that the greater subjective responsiveness of women may have been a "function of a self-fulfilling expectancy of what the hypnotic experience is supposed to be, even though their behavioural scores reflected no significant differences" (pg. 69).

CHAPTER III

METHOD

Subjects

51 subjects, 17 hearing and 34 deaf participated in this study. The mean age of subjects were: hearing $\bar{X}$=31.2 years, and deaf $\bar{X}$=26.3 years. Within the total sample were 13 males and 38 females. Subjects were recruited from the campuses of Gallaudet University, St. Paul Technical College, the University of Massachusetts Amherst as well as the Communities of St. Paul/Minneapolis and Western Massachusetts. All participants were required to be skilled signers. To ensure a high level of signing skill among hearing subjects the researcher recruited from programs that required students and/or faculty to be proficient in manual communication, e.g., Gallaudet University's psychology graduate program. Certified Interpreters for the Deaf were also utilized as research participants. Subjects were paid $5.00 each for their participation.

Procedure

The study was conducted over a ten month period. Research participants were seen individually for one 60 minute session. Upon entering the session, subjects and hypnotist communicated exclusively in sign language. Volunteers for this study completed the consent form (see

Appendix A), and pre-experiment questionnaire (see Appendix B).

Prior to the hypnotic procedure, subjects underwent a brief 5-10 minute orientation in which they were told that the purpose of the present study was to determine the difference, if any, in behavior of deaf and hearing as well as female and male participants on a well known hypnotic protocol. Time was taken to dispel any misconceptions that subjects might have had concerning hypnosis. Prior to induction participants were asked if they felt comfortable with the hypnotist's manual communication skills. As a part of the informed consent procedure, subjects were told that they were free to withdraw from the experiment at any time.

Hypnotic induction procedures were presented to all participants in the sign language mode that best matched the subject's stated preference, i.e., American Sign Language (ASL), Pigeon Sign Language (PSL), or Signing Exact English (SEE). Distribution of sign language mode can be seen in Table 3.1.

Table 3.1

Frequencies of Group (Hearing/Deaf) by Sign Language Mode

	ASL	PSL	SEE	TOTAL
Hearing	5	9	3	17
Deaf	14	19	1	34
TOTAL	19	28	4	51

With the exception of Dream and Negative Visual Hallucination (NVH) suggestions, subjects' eyes remained open throughout the hypnotic protocol. For these two suggestions participants were directed to close their eyes for a period of time (2 minutes for Dream suggestion, a few seconds for NVH), and re-open eyes when signaled by a touch on the knee.

All subjects were run individually by the author who is trained in hypnotic procedures and sign language. All subjects received hypnotic induction and suggestions from the Stanford Hypnotic Susceptibility Scale Form C (SHSS:C) (Weitzenhoffer & Hilgard, 1962). The SHSS:C was developed as a standardized measure of initial susceptibility to hypnosis. The SHSS:C incorporates suggestions that focus on ideomotor functions, such as arm rigidity and hand lowering, as well as those that address fantasy and cognitive distortion. These latter suggestions include Taste Hallucination, Age Regression, Dream, Anosmia to Ammonia, Hallucinated Voice, and Negative Visual Hallucination (Hilgard 1978). The SHSS:C, which was administered to a sample of 203 undergraduate students from Stanford University during the academic years of 1960-61 and 1961-62, contains a 12 item scoring procedure. Subjects receive a pass (+) or fail (-), dependent upon whether or not they comply with the item suggested. A "Total Score" is compiled by adding the items passed. The mean total score of the SHSS:C norming sample was $\bar{X} = 5.07$, with a standard

deviation of 3.15. This group demonstrated a moderate level of hypnotic susceptibility.

Of the twelve suggestion items on the SHSS:C, two were inappropriate to use with deaf subjects. These were Mosquito Hallucination and Hallucinated Voice. Both items require subjects to be auditorally aware of an external stimuli. As a part of the Mosquito Hallucination the hypnotist is to say "You may not have noticed a mosquito that has been buzzing, singing, as mosquitos do.... Listen to it now... hear its high pitched buzzing as it flies around your right hand...". Similarly, the hypnotist, suggesting Hallucinated Voice, is to tell the subject that "questions will be asked over a loudspeaker microphone...". The subject is to answer the questions by talking loudly (Weitzenhoffer and Hilgard 1962). Obviously deaf research participants would be unable to respond to these items adequately, thus invalidating the measure. These two items were eliminated from the procedure, resulting in a 10 item scale (see Appendix: C).

Dependant Measures

Dependent measures used in this study included:

1) the 10 item Stanford Hypnotic Susceptibility Scale: Form C (modified);
2) a self-report measure, used by Matthews and Mosher (1988) and Matthews and Isenberg (1992), in which subjects rated their own

performance on each of the SHSS-C suggestion items on a 7-point Likert-type scale (see Appendix E);

3) a 7-item rapport scale in which participants rated their experience of rapport with the hypnotist on each suggestion, (see Appendix D)
4) a 7-item resistance scale in which participants rated their feelings of opposition to the hypnotist on each suggestion (see Appendix D). The rapport and resistance scales' total score ranged from 7 (low resistance/rapport) to 49 (high resistance/rapport). The rapport and resistance scales, also used by Matthews and Mosher (1988) and Matthews and Isenberg (1992), attempted to measure overall rapport/resistance of subjects to the hypnotist rather than individual test items.
5) All participants were asked to rate their subjective experience of trance depth on a 7 point scale (see Appendix E).

CHAPTER IV

RESULTS

Behavioral Measures

The study was a 2(hearing vs deaf) X 2(male vs female) multiple analysis of variance (MANOVA) design. The analysis failed to reveal any significant main effects or interactions between deaf and hearing ($F = 3.13$, $df = 1$, $p<.08$), male and female ($F = 0.91$, $df = 1$, $p<.34$) subjects on SHSS-C behavioral items. As Table 4.1 suggests, these behavioral data indicate that at least a moderate level of hypnotic susceptibility was achieved. Thus no evidence was found to support the rejection of the first hypothesis.

Table 4.1

Mean SHSS:C Scores by Group (range 0-10)

Group	$\bar{X}$	S.D.
Hearing	6.35	2.15
Deaf	5.00	2.24
Female	5.74	2.14
Male	4.62	2.57

These moderate levels of hypnotic susceptibility were comparable to those of subjects from the original SHSS:C norming study. Results on the SHSS:C 12 point scale, showed the total SHSS:C norming group to have a mean score of

$\bar{X}$ = 5.07, S.D.= 3.15. Female subjects had a mean score of $\bar{X}$ = 4.86, S.D. = 2.91, and male subjects had a mean score of $\bar{X}$ = 5.28, S.D. = 3.27. The norming groups' scores were somewhat lower than those of the subgroups with the present study. This discrepancy may be due to the two auditory hallucination suggestions on the original SHSS:C protocol, which were not included in the present study. Only 48 percent of SHSS:C subjects responded positively to the Mosquito Hallucination. Even fewer, 9 percent received a passing score on the Hallucinated Voice suggestion. The low number of positive responses for these suggestions, particularly Hallucinated Voice may have lowered the overall mean score for the SHSS:C norming group. If this is true then total mean scores of subjects from the previous study and the present did not appear to differ significantly.

Self-Report Measures

The self-report measure of subject responsiveness to hypnotic susceptibility (highest possible score of 84 indicated that subject perceived him/herself to be completely responsive to suggestions) also failed to yield any significant main effect or interaction differences for group (hearing versus deaf), F = 3.23, *df* = 1, $p<.08$, or gender, F = 3.35, *df* = 1, $p<.07$. Therefore the second hypothesis is not rejected. As shown in Table 4.2, the data are comparable to the objective SHSS-C scores, indicating

that almost all subjects, whether deaf or hearing, male or female were able to achieve at least moderate levels of hypnotic responsiveness.

Table 4.2

Performance Self-Report Mean Scores by Group (range 12-84)

Group	$\bar{X}$	S.D.
Hearing	54.24	8.75
Deaf	46.74	11.13
Female	51.24	10.81
Male	43.38	9.26

There were no significant main effects or interaction differences for either group ($F = .04$, $df = 1$, $p<.84$) or gender ($F = .11$, $df = 1$, $p<.74$) on the rapport scale (minimum score of 7 indicated low rapport, maximum score of 49 indicated high rapport). There were also no significant main effects for group ($F = .59$, $df = 1$, $p<.44$) or gender ($F = .07$, $df = 1$, $p<.80$) on the resistance scale (minimum score of 7 indicated low resistance, a maximum score of 49 indicated high resistance). These results (see Table 4.3) fail to reject both the forth and fifth hypotheses.

Table 4.3

Rapport and Resistance Mean Scores by Group (range 7-49)

Dependent Measure	Group	$\bar{X}$	S.D.
Rapport (7-49)	Hearing	37.71	4.57
	Deaf	37.53	6.47
	Female	37.87	5.25
	Male	36.77	7.55
Resistance (7-49)	Hearing	22.82	5.64
	Deaf	25.47	5.99
	Female	24.55	5.96
	Male	24.69	6.17

There were no significant main effect or interaction differences for group, or gender on the resistance/rapport scales when considering language/communication mode. Thus, as predicted by the sixth and seventh hypotheses, the manual communication method used by subjects did not affect their feelings toward the hypnotist.

Although there were no significant main effect differences or interactions between deaf and hearing research participants in regard to the self-report of trance depth ($F = .21$, $df = 1$, $p<.65$), a significant main effect for gender occurred as can be seen in table 4.4.

Table 4.4

Depth of Trance, Self-Report, Mean Scores by Group (range 1-7)

Group	$\bar{X}$	S.D.
Hearing	4.47	1.33
Deaf	4.24	1.97
Female	4.63	1.70*
Male	3.38	1.71*

* F = 5.92, *df* = 1, $p<.03$

Correlational Measures

Results using the Pearson Correlation Coefficient showed a positive correlation between both total scores on SHSS:C and Depth of Trance Self-Report, r=.44, and total scores on SHSS:C and Performance Self-Report r=.58. This is illustrated in table 4.5

Table 4.5

Correlation Measures of SHSS:C Total Scores between Depth of Trance Self-Report and Performance Self-Report

	Depth of Trance	Performance
SHSS:C Total Score	.44	.58

SHSS:C Item Analysis

Results of a chi-square analysis of SHSS:C items showed no significant difference between group (deaf/hearing) with the exception of item four, Arm Rigidity (chi-square Value=6.75, *df*=1, $p<.02$). As can be seen on Table 4.6, 82% of hearing subjects were unable to bend their arms, as suggested. Whereas only 44% of deaf subjects passed this suggestion.

Table 4.6

Percent Passing of each Item within the Total SHSS:C by Deaf, Hearing and SHSS:C Norming Population

Item	SHSS:C (N=203)	DEAF (N=34)	HEARING (N=17)
1. Hand lowering	92	79	100
2. Moving hands apart	88	76	94
3. Taste hallucination	46	50	70
4. Arm rigidity	45	44	82 * **
5. Dream	44	79**	71
6. Age-regression	43	38	59
7. Arm immobilization	36	24	47
8. Anosmia to ammonia	19	53**	70**
9. Negative visual hallucination (sees two of three boxes)	9	00	12
10. Amnesia	27	56**	29

* - p <.02 between hearing and deaf subjects
** - p <.001 between subgroup and SHSS:C norming sample

There was no significant difference between female and male subjects with regard to the SHSS-C item analysis. However there were significant differences between gender subgroups and SHSS:C norming sample. (see Table 4.7).

Table 4.7

Percent Passing of each Item within the Total SHSS:C by Female, Male and SHSS:C Norming Population

Item	SHSS:C (N=203)	Female (N=38)	Male (N=13)
1. Hand lowering	92	92	69*
2. Moving hands apart	88	84	77
3. Taste hallucination	46	63	39
4. Arm rigidity	45	61	46
5. Dream	44	82**	62
6. Age-regression	43	50	31
7. Arm immobilization	36	34	23
8. Anosmia to ammonia	19	63**	46
9. Negative visual hallucination (sees two of three boxes)	9	3	7
10. Amnesia	27	42	62*

* - p <.01 between subgroup and SHSS:C norming sample
** - p <.001 between subgroup and SHSS:C norming sample

SHSS:C item analysis reveals no significant statistical differences between total signing group and the SHSS:C with the exception of Dream, Anosmia to Ammonia and Amnesia suggestions. On each of these items the signing group tended to respond more positively than the original norming group. (see Table 4.8).

Table 4.8

Percent Passing of each Item within the Total SHSS:C by Total Signing Group and SHSS:C Norming Population

Item	SHSS:C (N=203)	Total signing group (N=51)
1. Hand lowering	92	86
2. Moving hands apart	88	82
3. Taste hallucination	46	57
4. Arm rigidity	45	57
5. Dream	44	77**
6. Age-regression	43	45
7. Arm immobilization	36	31
8. Anosmia to ammonia	19	59**
9. Negative visual hallucination (sees two of three boxes)	9	04
10. Amnesia	27	47*

* - $p < .01$
** - $p < .001$

CHAPTER V

DISCUSSION, SUMMARY AND CONCLUSIONS

Discussion

The purpose of this study was to compare the hypnotic susceptibility of deaf and hearing, male and female subjects. One null hypothesis presented indicated that there would be no significant difference in hypnotizability on the Stanford Hypnotic Susceptibility Scale form C (SHSS:C), between group, (hearing versus deaf) or gender. Included in this research was a comparison of SHSS:C item response patterns of subjects from this study, all of whom signed, with those of the original SHSS:C norming group.

Subjects' self-report measures of response to hypnotic suggestions and overall trance depth was also examined. Another null hypothesis presented stated that there would be no significant difference in these measures between group (hearing versus deaf) or gender. A correlation analysis was completed between the self-report suggestion response, self-report trance depth and SHSS:C scores. The purpose of this was to verify a positive relationship between these measures.

Also examined in this research was the rapport and resistance of subjects with the hypnotist. A null hypothesis was presented stating that no significant differences would occur in these measures between group (deaf versus hearing), or gender even when considering sign language mode.

The results of the present study indicate that on the objective behavioral ratings as well as self-report of performance, and self-report of trance depth, there were no significant main effects or interactions between deaf or hearing subjects. These findings are consistent with those of Matthews and Isenberg (1992). Although in the earlier study researchers used the Stanford Hypnotic Clinical Scale for Adults (SHCS:A), Morgan & Hilgard (1978/1979) reported a high correlation between this objective measure and the SHSS:C. They found a product-moment correlation of .72 between the total score of the SHCS:A and the SHSS:C. Results from Matthews and Isenberg (1992) and the present study, show deaf and hearing subjects exhibiting at least a moderate level of hypnotic susceptibility. What is unique about the present findings is that both population samples received hypnotic inductions visually, through sign language.

Matthews and Isenberg (1992), and Isenberg and Matthews (1991) questioned whether or not statistical differences would occur in subject response with regard to males and females who communicate in sign language. No significant main effect or interaction differences in gender response to the SHSS:C or self-report of performance occurred. However there was a significant main effect difference in trance depth self-report scores between gender groups. These results seem to indicate that male participants felt less in trance than did female participants. When examining

findings of the performance self-report, male subjects did tend to rate their responses to individual suggestions lower than females, but were not statistically significant. Matthews and Mosher (1988) found that males reported experiencing fewer hypnotic tasks than females, however they did not significantly differ from females in their rating of overall experience of trance depth. The inconsistency of these results seem to reflect those of past research (Matthews and Mosher 1988, D'Eon, Pawlak, Mah and Spanos 1979, Weitzenhoffer and Weitzenhoffer 1958, and Sheehan in Fromm & Shor 1979).

Rapport/Resistance

As with the findings of Matthews and Isenberg (1992), the present study found no significant main effect or interaction differences for hearing vs deaf subjects on the rapport scale. However, the present study failed to support findings of the previous researchers with regard to resistance to therapist. Matthews and Isenberg (1992), found that deaf subjects seemed to be more resistant to the hypnotist than hearing subjects. The authors speculated that since the hypnotist was hearing, "deaf subjects might have viewed the hypnotist less positively than hearing subjects with whom she easily identifies" (pg. 10).

Another factor considered to affect resistance scales was communication. Signing mode of subjects was not formally addressed in the Matthews and Isenberg (1992) study. Given the variety of sign language systems with

which subjects may have used, the hypnotist of this earlier study "may have inadvertently increased resistance by failing to match communication modes efficiently" (pg. 10). Although the present study did not examine hypnotist characteristics e.g., hearing vs deaf, it did explore the impact of manual communication style on rapport and resistance scales. Neither deaf/hearing or male/female subjects demonstrated significant main effect or interaction differences on either the rapport or resistance scales even when considering signing mode. It is interesting to note that the same hypnotist participated in both research projects.

Results of the resistance scale from the present study seem to be more congruent with other dependent measures than do those from Matthews and Isenberg (1992). In fact, Matthews and Isenberg questioned the validity and replicability of their findings due to the lack of significant differences on other subjective measures. It is reasonable to assume that deaf and hearing subjects who demonstrate and report similar levels of hypnotic susceptibility, and comfort with the hypnotist would also relate similar levels of resistance.

SHSS:C Item Analysis: Fantasy and Cognitive Distortion Suggestions

A chi square item analysis of the SHSS:C revealed no significant differences in responses between male versus female subjects. A similar analysis of SHSS:C items with

regard to hearing versus deaf subjects revealed no statistically significant differences with the exception of item four, arm rigidity. Eighty-two percent of hearing subjects responded positively to this suggestion, meaning that a large percentage of hearing subjects could not bend their arm within a 10 second period. This contrasts with deaf subjects of whom only 44% responded positively to the suggestion. Interestingly, deaf subjects matched the original norming population (45%) in response pattern for this item. Hearing subjects differed significantly from the SHSS:C sample. It is unclear as to why so many hearing subjects would follow this particular suggestion. When one examines the distribution of arm rigidity responses among gender groups, males tend to more closely parallel those of deaf and SHSS:C norming group than do females. It may be that hearing females were more willing to perform this particular ideomotor suggestion than other participants within this study.

Further chi square item analysis comparing SHSS:C norming population with the total signing subject sample revealed significant differences in responses for dream, anosmia to ammonia and amnesia responses. A greater number of signing subjects responded positively to all three of these suggestions than did those of the norming group. It is interesting to note that these three items test fantasy and cognitive distortion. Sheehan, in Fromm and Shor (1979), stated that hypnotizability seems to be correlated

with various aspects of imagination. They argued that people with the capacity for vivid imagery may have an aptitude for some aspects of trance behavior. Oliver Sacks (1989) examined the notion that deaf signers develop a "special visual sensibility" as a function of their visuospatial language.

> There is a considerable and somewhat controversial literature on the character of cognitive function in the deaf. There is some evidence that their strong visuality disposes them to specifically "visual" forms of memory and thinking. (Sacks, 1989 pg. 107).

It seems possible that subjects, deaf and/or hearing, who communicate visually may have a higher capacity for imagery than the general population. Thus they might be more susceptible to those suggestions that require imagination and cognitive distortion.

SHSS:C Item Analysis: Ideomotor Suggestions

Of the ten suggestions on the SHSS:C, four incorporated some sort of motor response. These suggestions included Hand Lowering, Moving Hands Apart, Arm Rigidity, and Arm Immobilization. As stated before, with the exception of Arm Rigidity, there were no significant differences in responses between hearing and deaf or male and female subjects. Similarly, there were no significant differences in motor response between the SHSS:C norming population and total signing group. This response pattern to ideomotor suggestions between hearing and deaf subjects contrasts with that of Isenberg and Matthews (1991) in which more deaf

subjects responded positively to the suggestion "hands coming together" than did hearing subjects. The previous researchers wondered if the fact that deaf people received suggestions visually while hearing subjects received suggestions auditorally with eyes closed may have affected motor suggestion responses. By experiencing hypnotic suggestions visually, deaf subjects may have observed more cues by the hypnotist. A heightened sense of expectancy may have been communicated through signs and body language encouraging deaf subjects to respond positively to the suggestion. With eyes closed, hearing subjects would have missed these visual cues. Though this may have been the case in the Matthews and Isenberg (1992) study, the lack of significant difference of ideomotor items on the SHSS:C between the norming population of whom were hearing, with eyes closed and total signing population does not support their supposition.

Qualitative Observations

Quantitative measures appear to indicate that deaf and hearing, as well as male and female subjects in this study did not significantly differ in their overall hypnotic susceptibility. However, as was observed by Isenberg and Matthews (1991), the process of experiencing hypnosis through a visual language appears to be different from an auditory one. It is important to examine these observations to help understand more fully how deaf people as well as people who sign in general experience hypnosis.

Introduction of Hypnosis and Trance. As stated before, time was taken to explain and dispel myths about hypnosis during the pre-induction phase. The researcher found that hearing participants tended to have more experience with hypnosis than their deaf counterparts. This was not necessarily a benefit for hearing subjects. The experiences many hearing subjects had were either negative or filled with inaccurate notions about the hypnotic process. It was not unusual for hearing subjects to ask if the hypnotist would be making them "quack like a duck" or "bark like a dog". No deaf subject expressed this concern. The notion that deaf people would have less exposure to hypnosis than hearing people, which was also observed by Isenberg and Matthews (1991), is quite understandable. As the literature has shown, mental health professionals have not considered hypnosis a viable therapeutic technique until recently. Stage hypnosis is not easily accessible to deaf people, particularly without an interpreter. There are simply not the opportunities for deaf people to observe or directly experience this procedure. The traditional sign for hypnosis, a hand held in front of the signer's face, at eye level, swinging an imaginary pendulum or object on which to focus, illustrates the simplistic concept deaf people have of this process. As a result, both groups, deaf and hearing required education regarding this procedure.

The researcher/hypnotist in the present study utilized the same signs for hypnosis and trance that were developed by Isenberg and Matthews (1991). The sign for hypnosis was the letter (H) underneath the opposite hand, palm facing downward, indicating below the conscious level. The sign for trance was the same, with the substitution of a (T) for the (H). As Isenberg and Matthews (1991) pointed out, these signs were created for the specific purpose of research and are not established or recognized signs by the deaf community.

Induction. As has been stated, the SHSS:C is recognized as a standardized measure of hypnotic susceptibility. It is a protocol that has been used by countless researchers for almost 30 years. Even so, there is no indication that this procedure has ever been used, prior to the present study, with deaf and hearing people while communicating in sign language. It is important to analyze both the similarities and contrasts between the visually presented protocol of this study with the traditional auditory presentation.

In their 1991 study, Isenberg and Matthews found it easier to adapt the Stanford Hypnotic Clinical Scale (SCHS) Morgan and Hilgard (1978) induction protocol into ASL than the Indirect Suggestion Scale (ISS) (Matthews, Bennett, Bean and Gallagher, 1985). Because of this, the SCHS was used for hypnotic induction in the present study. Induction began with a progressive relaxation technique. Working from

feet up to forehead, subjects were encouraged to allow different body sections to relax and feel comfortable. This technique was followed by a 1 to 20 count in which a trance state was suggested by the hypnotist. The entire procedure easily translated into sign language. All research participants seemed able to achieve a sense of relaxation.

The hypnotist observed many hearing participants trying to close their eyes during the induction process. Several of these subjects reported having a strong desire to close their eyes, and felt that trance level was adversely affected by the fact they had to keep their eyes open to maintain communication. In contrast, deaf subjects exhibited no need to enhance trance depth through eye closure. This difference in adapting to relaxation and trance may be due to the primary sensory system with which a person communicates. Hearing people depend on auditory cues from their environment to process information. Though visual information is very important to those who hear, it is auditory language that is primary for cognition. It is not uncommon for hearing people to close their eyes when someone else asks them to construct a visual picture. By doing this, hearing people eliminate external visual "noise" while allowing their auditory senses to provide information with which to create an image. Deaf people, on the other hand, primarily depend on vision as an information processing system. With little or no auditory stimulus or "noise" to interfere, people who are deaf have developed an

ability to create visual images while receiving information through their eyes. One only has to observe deaf people telling stories in sign language to recognize the ease with which this population can internally image while receiving information through a visual language. Given this primary sensory difference in information processing it seems reasonable that deaf subjects would not desire to close their eyes during a trance experience.

Hand Lowering and Hands Apart. Translating the initial component of ideomotor behavior suggestions Hand Lowering and Hands Apart from English to sign language was in many ways very easy. The hypnotist had only to raise her left arm and point to the subject to indicate she wanted him/her to do likewise. It was only when the hypnotist needed to communicate the suggestion "lower the hand and arm" did language issues arise. Subjects were told to imagine a heavy ball in their raised hand, become heavier and heavier. It was then suggested that as they imagined their arm feeling heavy, it would begin to lower. This suggestion became difficult to express without modeling the behavior. To accurately sign Hand Lowering, one would extend their arm out and begin to lower it. Had subjects responded to this sign suggestion it would have been difficult to assess whether or not the behavior was an example of hypnotic susceptibility or just a conscious response to the direction. To avoid the latter, the hypnotist used both arms, bent upward. With cupped hands, fingertips of both

hands approximately 4 inches from each other, the hypnotist moved her arms down in a stepwise fashion. Though the use of two arms bent did not resemble the one extended arm of subjects, the movement was similar to the suggestion given. As with Hand Lowering, item number two, Hands Apart, was signed in a way to avoid mimicking by subjects. Hands were close together, at chest height, bent inward with fingertips and palms facing the hypnotist's chest. The hypnotist then moved her hands away from each other. Although her arms were bent with elbows at her side, the sign resembled the movement suggested to subjects. Because of the similarity of signed suggestion and behavioral response, one might wonder whether a positive response was an indicator of hypnotic susceptibility or just an act of conscious compliance. Due to the lack of significant difference between total signing group and the SHSS:C norming population, it could be argued that Hand Lowering and Hands Apart were effective susceptibility indicators for subjects in this research project. Even so, further investigation is recommended.

Arm Rigidity and Arm Immobilization. In contrast with the first two SHSS:C items, Arm Rigidity and Arm Immobilization required the hypnotist to negatively model the ideomotor suggestions. As with Hand Lowering, subjects were shown to lift one arm by watching the hypnotist model the behavior. Subjects were encouraged to imagine their arm becoming stiff and rigid. To express this concept both the

sign "hard" and the fingerspelled word "stiff" were used. She then suggested an inability to bend the arm. To do this the hypnotist would sign the concept "can't" followed by an arm bending motion. These signed behavioral directions contrasted directly with the first two suggestions. By demonstrating a movement that subjects are told they cannot do, the researcher avoids the question of conscious compliance versus trance indicator. Similar instructions were given to subjects for Arm Immobilization. The sign "can't" followed by the hypnotist raising her arm off her lap indicated to subjects the exact movement they were not to do. Because these two suggestions avoid the issue of conscious compliance by direct modeling, Arm Immobilization and Arm Rigidity may be more valid measures of hypnotic susceptibility than Hand Lowering and Hands Apart.

Taste Hallucination. Taste Hallucination was, in reality, two separate taste suggestions. Subjects were first asked to imagine and begin to experience a sweet taste. Whatever their response they were then asked to imagine and experience a bitter taste. To receive a positive response score both tastes had to be experienced by the subject. Taste sensation indicators were noted by the hypnotist/observer. These included mouth and tongue movements, as well as changes in facial expression. There were no significant issues with regard to signing this suggestion. The SHSS:C protocol easily translated into manual communication. The only point of interest with

regard to the presentation of this suggestion had to do with the impact of subjects' eyes open. Subjects not only viewed the signs of the hypnotist but were also aware of any facial expressions directed toward them. When she suggested a sweet taste, the hypnotist's face conveyed the notion of sweet and pleasure. In contrast she expressed a sense of bitterness by pursing her lips and tightening facial muscles when signing sour/bitter taste. Facial expressions are an important dimension of sign language. To sign without facial affect would be like talking without voice inflection. Just as people who speak have their own characteristic inflections and emotional expressions when talking, so too do people who sign. It may be that as SHSS:C norming subjects attended to the hypnotist's voice tones as he/she suggested a particular taste, subjects in the present study attended to facial cues of the hypnotist. It would be interesting to examine the Taste Hallucination response pattern of subjects with different signing hypnotists.

Anosmia to Ammonia. Significantly more subjects in the present study responded positively to Anosmia to Ammonia than did the SHSS:C norming group. Although this may be due to superior visualization capabilities of subjects who sign, it is important to review the process in which the suggestion was communicated.

This particular suggestion was a more challenging one to accurately translate into sign language. The hypnotist first signed to subjects: "Notice nose. Soon smell change...become less...smell, sensitive nothing...Really now no smell, sensitive nothing. I show you." At this point the hypnotist would reach down below her chair and pull out a small clear glass bottle filled with diluted ammonia. The bottle would be placed within 3 inches of the subjects' nose and sign "smell". After a moment the bottle would be placed on the floor and the hypnotist would sign "Smell anything?". Once subjects reported whether or not they noticed an odor, the hypnotist would suggest a normal ability to smell. The signs for this were: "Now notice change... smell possible ... normal... sensitive yes... smell normal... I show you." The ammonia was again placed under subjects' nose to be smelled.

Although the sign concepts in writing appear similar to the SHSS:C, linguistically they are not. It seemed that many subjects interpreted the sign "can't smell" to mean "can't breathe through nose". These subjects did not inhale deeply when first presented the ammonia. One woman opened her mouth to breath. She smelled nothing on the first try. Only when she was told that her nose was normal again did she close her mouth, deeply inhaling ammonia fumes through her nose with obvious displeasure. Clearly some subjects within the present study did not respond to the same message given to the SHSS:C norming group. They did not smell

ammonia because they had altered their breathing. The norming group was told to "take a better sniff" if they failed to sniff satisfactorily. The hypnotist in the present study held the bottle for an extended period of time rather than sign "sniff again". Though this may have negatively affected the standardization process, what is most salient is that subjects did respond to the suggestion in the way they interpreted it. Those subjects who understood the signs "can't smell" to mean "can't breath" did just that, stopped breathing and were unable to smell ammonia. Thus they responded positively to the suggestion. Others who interpreted the same signs to mean "can't smell odors" inhaled well and showing no awareness of ammonia also positively responded to the suggestion. It may be that the total number of signing subjects who demonstrated an inability to smell ammonia were in fact a synthesis of two subset groups responding to different concepts. Both subgroups demonstrated a susceptibility to the suggestion they received. However not being able to breath versus not being able to smell may be distinctly different concepts. Weitzenhoffer and Hilgard (1962) considered Anosmia to Ammonia to be a suggestion that tested cognitive distortion and fantasy. Those signing subjects who interpreted the hypnotist as signing "can't smell odors", responded as Weitzenhoffer and Hilgard intended. Those who saw the hypnotist to mean "can't breathe through nose" were not being asked to demonstrate cognitive distortion but rather a

ideomotor behavior. If this is so, then the number of positive responses of total signing group does not accurately reflect susceptibility to anosmia to ammonia as it was intended by the original authors. This may be another reason as to why so many more signing subjects than the SHSS:C norming group responded positively to this suggestion.

Dream. There were two occasions in which signing subjects were told to close their eyes. These were Dream, and Negative Visual Hallucination. To help facilitate the dream process, subjects were told to close their eyes and dream for two minutes at which time the hypnotist would touch their knee. When they felt the knee touch the dream was to end and they were to look at the hypnotist, remaining comfortably in trance. Isenberg and Matthews (1991) found it necessary to utilize the signs "finish", "dream", "stay", "trance", rather than "open eyes" to facilitate a continued trance state following the dream experience. The reason for this is that the sign "open eyes" also means "wake up". One could interpret this to mean "come out of trance". Isenberg and Matthews (1991) whose dream suggestion lasted one minute, found that "By focusing on signs that had subjects complete dreams while remaining in a hypnotic state, all were able to reopen their eyes after the minute and continue with their individual level of trance without interruption." (pg. 95). These same signs were used in the present

research with subjects demonstrating behaviors consistent with those of the previous study.

Negative Visual Hallucination. As indicated above, Negative Visual Hallucination (NVH) required subjects to momentarily close their eyes. Unlike the suggestion to Dream in which eye closure helped allow a trance deepening experience, subjects closed their eyes for a brief period simply for reasons of logistics. Subjects were told that when directed they would see two blocks. In fact three blocks were presented. For the SHSS:C norming group who already had their eyes closed, the hypnotist easily placed the blocks on a small table in front of them without the subjects' observation. Participants had only to open their eyes and tell how many blocks were seen. Whereas, because signing subjects had their eyes open, it was necessary for them to close eyes in order for the hypnotist to place the three blocks appropriately. As with the dream sequence, subjects were told to close their eyes until they felt a touch on their knee at which time they would look at two blocks. Once subjects opened their eyes they were directed to look down and report the amount of blocks seen.

Interestingly, all but two subjects saw three blocks. Statistically, this was similar to the SHSS:C norming group response pattern. Because the male and female participants who reported seeing two blocks were among the last hypnotized for this study, one wonders if the hypnotist altered the way she signed the suggestion affecting a

positive response. It is difficult to answer this but would be worth further investigation.

Age Regression. By far the most interesting suggestion of which to observe responses was Age Regression. This was particularly true in this study. The SHSS:C protocol provides an opportunity for participants to experience a nice day both as a 5th and 2nd grader. Prior to Age Regression, subjects were asked to write their name, age, and the date. They then were encouraged to remember and become a young child in the fifth grade. Once the hypnotist had counted to five and told subjects they were in the fifth grade a series of questions regarding age, where they were, what they were doing and the name of their teacher were asked. Subjects again were asked to write their name, age and the date, on a blank sheet of paper. The same process was repeated when subjects were further regressed to the second grade. To receive a positive response, subjects had to provide a "Clear change in handwriting between the present and one of the regressed ages" (Weitzenhoffer and Hilgard, 1962). Figure 5.1 is an example of a positive Age Regression response. This particular subject wrote her name in three distinct styles. When her handwriting was shown to her after the trance experience the subject commented that her fifth grade "V" was written exactly as she had done as a child. She further explained that nuns in her school would

slap her hands for drawing the letter incorrectly. It is important to note that she reported being completely unaware of the changes in writing style when in trance and was surprised to see the differences. Another interesting aspect of this subject's writing response was the use of three different first names. Many subjects wrote a more formal adult name prior to Age Regression and a more casual or nick name when regressed. One male participant wrote Richard (adult), Rick (fifth grade), and Ricky (second grade). Another female wrote Elizabeth as an adult and Beth when regressed to both fifth and second grades. However, as a fifth grader she wrote her name in cursive, and as a second grader she printed. Figure 5.2 shows the handwriting changes of a deaf female subject. Of particular interest is her experience as a second grader. When asked to write her name the subject nodded "no". The hypnotist asked if she was able to do this task, which she responded negatively. The hypnotist then asked if she knew the "ABC's". The subject again nodded "no". The hypnotist inquired if she knew how to write her numbers, which she did. The response "6", her age, was the only information she could provide. Following the trance experience the subject, when asked, stated she learned the alphabet in third grade.

These examples of positive Age Regression response along with the lack of significant difference in overall responses between total signing group and SHSS:C norming population seem to strongly indicate an ability for those

who communicate in sign language to experience age regression through hypnotic suggestion. Even though the SHSS:C handwriting criteria appeared to be an adequate indication of Age Regression susceptibility, it is a limited one. Isenberg and Matthews (1991) found many deaf subjects to exhibit age regression behaviors that were different from hearing subjects in their research. The hypnotist was able to observe shifts in posture, facial expressions with eyes open and most importantly placement of self and others through sign language. Isenberg and Matthews (1991) noted how:

> Some subjects would look ahead placing one finger in front of them to signify themselves, then point to the positions of others in relation to their self-representation. This seemed to indicate that, though they could see themselves as a child, they were not able to experience the age regression directly. Others would use their body frames as the point of reference and point to the position of others in relation to themselves. (pg. 96)

This same use of signs to place the self as object in front of the subject as if viewing a picture rather than directly experiencing an age regression occurred for several of those in the present study. Likewise, others used their bodies as a reference point seemingly demonstrating a direct age regression experience. Isenberg and Matthews (1991) wondered if these responses were unique to deaf subjects. Observations made by this author indicate that the placement of self as object is more a function of language rather than

hearing loss. For example, a hearing female participant, age regressed to the fifth grade, was asked what she was doing in school. She replied, smiling, that she was looking at a boy. Her eyes directed to the side of the hypnotist indicated his position across the room. Another subject placed a friend to one side of her body as she reported that she was talking to this person while in class.

Isenberg and Matthews (1991) questioned whether signing subjects would alter signing style when age regressed. They pointed out that some hearing people changed their voice tones to that of a child. Would deaf subjects sign like they did as children? Would hearing and or deaf subjects stop signing when age regressed to a time prior to learning sign language? Though these questions were not addressed statistically, subjects were asked to identify at what age they learned sign language. This information was then taken into consideration when video-tapes were reviewed and Age Regression behaviors were observed. It was difficult for the researcher to clearly discern a childlike signing style of age regressed subjects. However, many did exhibit difficulties raising their hands to sign, but this behavior was more consistent with a relaxed trance state than that of age regression. Two hearing subjects momentarily seemed to not comprehend the signs of the hypnotist while age regressed. This also was difficult to assess in part because of the short amount of time that lack of sign comprehension appeared. Accurate assessment was also

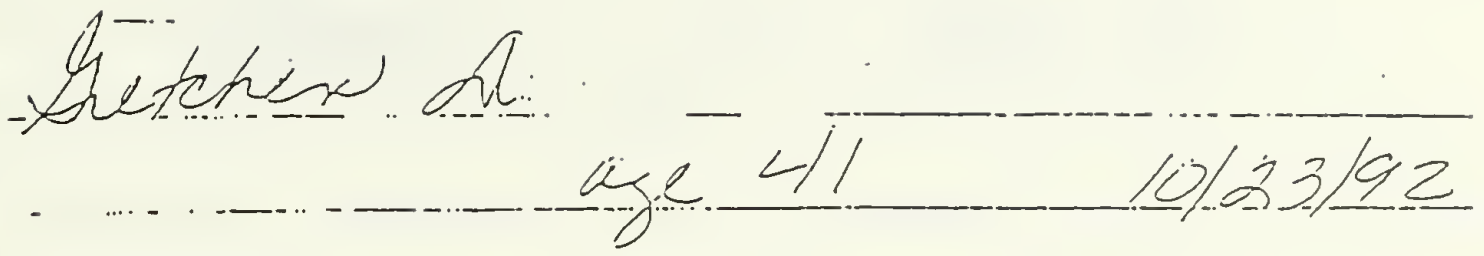
hampered by the subjects' inability to remember their age regressed experience. One woman was unable to report her feelings and experiences at that time due to amnesia. In fact, she refused to believe there was an Age Regression suggestion. However, when age regressed to fifth grade, this same subject with eyes open wide, and teary, did not respond to the hypnotist's signed questions. It was only when the subject was asked to provide a handwriting sample that she appeared to understand. Even so, this 35 year old subject began to write her age with the number 2. She paused at this point and then wrote her adult age. Subsequently, the subject failed to respond positively to any further suggestions. Had she not been able to write her name, the hypnotist was prepared to use her voice to talk to the subject. Because this was not necessary, it remains unclear why the subject did not acknowledge the hypnotist's signs.

Demographic information showed most hearing subjects to have learned sign language as adults. Even though many provided clear handwriting changes when age regressed no hearing subject tried to speak. Only one subject, a hearing female, from the total signing group changed signing style when age regressed. This subject had learned Signing Exact English (SEE) as a child. She had only begun learning ASL two years prior to this study. She preferred communicating with an ASL focus as an adult and had no trouble understanding the hypnotist until age regressed to the fifth

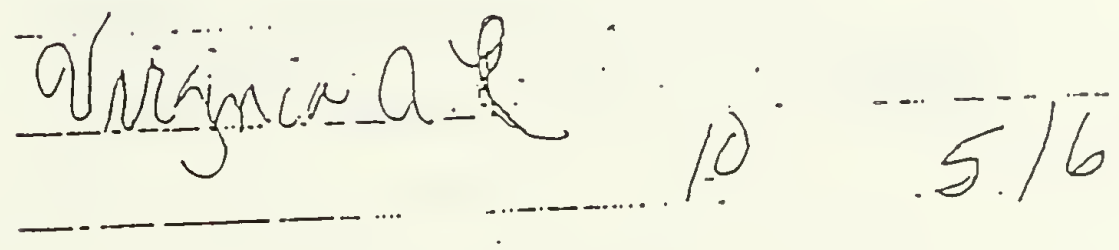
grade. An ASL idiom used to ask a person what they are doing is signed as "do, do, do". This was how the hypnotist queried the subject. With a puzzled expression the subject signed "don't understand your signs. Sign slower". Interestingly she made a common directional error when communicating "sign". This is often an error made by novice signers. Once the hypnotist changed to SEE the age regressed subject comprehended easily. Both hypnotist and subject returned to ASL once the Age Regression experience was completed.

Unfortunately these examples of communication changes affected by age regression are limited by their small numbers and subjective qualities.

ADULT



FIFTH GRADE



SECOND GRADE

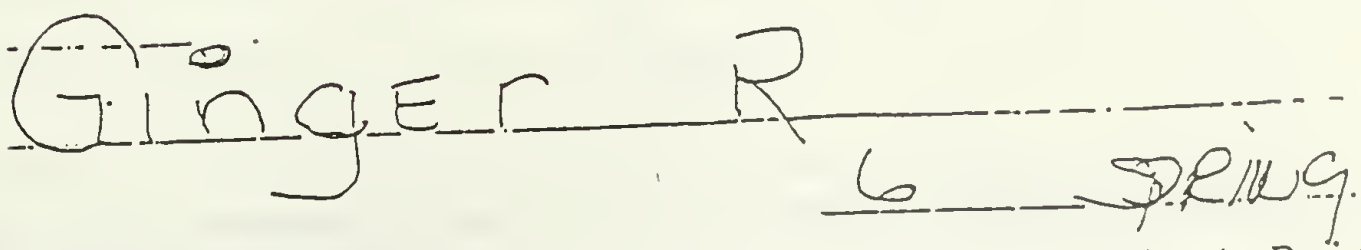
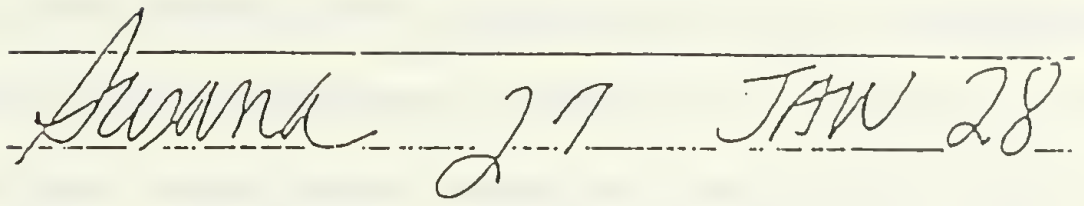
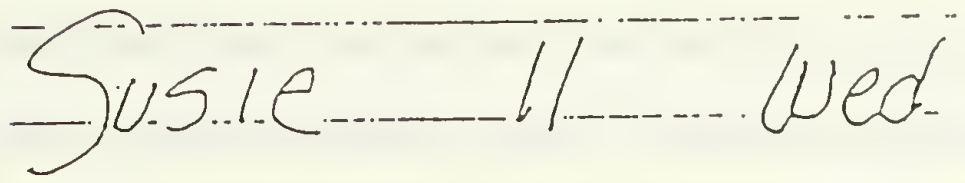


Figure 5.1 Handwriting of Hearing Female Subject Prior to and During Age Regression.

ADULT



FIFTH GRADE



SECOND GRADE

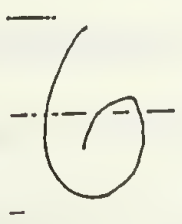


Figure 5.2 Handwriting of Deaf Female Subject Prior to and During Age Regression.

Amnesia. As with many SHSS:C items, it was relatively easy to translate the Amnesia suggestion from English to sign language. The concept of leaving the trance state, feeling comfortable but having difficulty remembering what occurred while entranced presented no signing problems. Subjects who manifested amnesiac qualities did so in an inconsistent fashion. Those who appeared highly susceptible to hypnotic suggestions had a hard time remembering any of the trance experience. Other subjects were only amnesiac with those suggestions they responded positively to. For example, some subjects only performed ideomotor behaviors such as Arms Apart, Arm Rigidity, etc. When recalling their trance experience during the amnesiac phase, many of these subjects could remember cognitive distortion and fantasy suggestions but not ideomotor behaviors. It has been noted earlier that significantly more signing subjects experienced amnesia than did the SHSS:C norming group. Further research is needed to examine the amnesiac responses of those who sign.

Trance Indicators. Both deaf and hearing subjects presented many traditional trance indicators, e.g., flattened affect, change in breathing, glazed stare, and autonomic head nods and finger twitches. Many participants reported feeling somewhat confused during the trance phenomenon. A few subjects later reported noticing a narrowing of peripheral vision while in trance.

Also observed were unique indicators directly related to manual communication. As Isenberg and Matthews (1991) observed, subjects changed the manner in which they signed. Pre and post hypnotic signing qualities tended to be idiosyncratic. Many participants in the present study were seen to sign very slowly while in trance. Some expanded their signing field, while others could barely lift their arms off their lap in order to sign.

Subjects also differed in visual attending. While many directed their stare onto the hypnotist's face, others lowered their gaze to her chest. Some looked as low as her waist line. This was particularly interesting in that one would assume that these people would be unable to comprehend signs and mouth movements above their visual field. It was true that the hypnotist adjusted her signing field by lowering her arms somewhat, but even this would not have been thought to provide clear and complete communication. However these subjects were able to exhibit an understanding of and respond appropriately to suggestions being made.

Summary and Conclusions

The purpose of this study was to compare the hypnotic susceptibility of deaf and hearing, male and female subjects. This comparison focused on the responses of subjects to hypnotic suggestions presented through visual rather than auditory receptors. No significant differences were found between deaf and hearing, or male and female

subjects with regard to objective measures of hypnotic susceptibility, rapport and/or resistance to the hypnotist, or self-report of subjects' performance. Male subjects were found to report significantly lower levels of trance depth than female subjects.

The total signing group was compared with the SHSS:C norming sample group with regard to 10 SHSS:C item responses. The data indicated similar response patterns between the two research populations with regard to all but three suggestions, Dream, Anosmia to ammonia, and Amnesia. In all three cases a greater percentage of total signing group subjects responded positively to these suggestions than did the SHSS:C norming group. These results not only support the notion that deaf people demonstrate hypnotic susceptibility comparable to hearing people, but that hypnotic induction and suggestion can be effectively communicated visually, through sign language.

The acceptance of these results support the application of hypnosis in a clinical setting when working with deaf people while communicating in sign language. An example of this was illustrated by a male subject known to have Ushers Syndrome. This 20 year old student asked to participate in the research project even though he was legally blind as well as deaf. When the researcher/hypnotist hesitated, the volunteer asked not to be excluded from the experiment because of his double disability. The researcher acquiesced. It was soon clear that data provided by this

subject was contaminated by his severely limited visual field thus he was not included in the statistical analysis. However he did present some trance-like behaviors and reported later that he felt relaxed and thought he had experienced a trance state. What was most significant for this subject was the Dream-suggestion. Unlike all other participants of this study, this subject spontaneously began to sign his dream while his eyes were closed. The following is a transcript of his "dream sign".

> "Wish driving, drive around... Wish normal vision to see many, many things. To play sports... baseball, basketball, drive a van fast, drive. Many many people see normally. Wish... me out driving... I want, want to drive... want my license... a fine van to drive and travel... travel to many cities... I'd love to drive."

Prior to hypnosis, the student presented himself as one who was not overwhelmed by his disability. He was graduating later in the semester and planned to attend graduate school at a hearing university in a distant state. His persistence in participating in this study despite his limitations was also an example of his conscious presentation of personal strength. This man's expression, through the Dream suggestion experience, of grief and loss with regards to his visual disability contrasted dramatically from his pre and post hypnotic behavior. One can imagine how this material could be helpful to him in a therapeutic environment.

The present study tried to address concerns presented by Isenberg and Matthews (1991), e.g., male versus female

hypnotic responses among deaf subjects, and signing mode as a variable affecting the hypnosis experience. It did not consider deaf versus hearing hypnotist's effect on subject's hypnotic susceptibility, rapport and resistance or trance depth. This study also did not attend to the impact of an interpreter on subjects' hypnotic susceptibility. Though these are important issues to address empirically, it seems appropriate to direct research in the area of therapeutic effectiveness of hypnosis for deaf people. How might the use of cognitive distortion and imagery through hypnosis impact deaf clients suffering from severe anxiety? How does hypnosis, as a therapeutic technique, compare with other clinical approaches when working with deaf clients who sign? Previous authors (Bartlett 1966, Gaston & Hutzell 1976, Gravitz 1981, and Isenberg 1988) have discussed hypnotic therapeutic interventions through case examples. It is recommended that researchers now examine these interventions empirically. Further study in this area can only improve our understanding of hypnosis and contribute to the mental health of deaf clients.

APPENDIX A

PARTICIPANT CONSENT FORM

University of Massachusetts
Amherst, MA 01003

Participant Consent Form

PROCEDURES

- I agree to participate in this research study.

- I understand that the purpose of this research is to compare how deaf and hearing people respond to hypnotic suggestions. Results of this study will help mental health clinicians understand how deaf people respond to this technique.

- I will be asked to experience hypnosis that will be presented to me in sign language by a person trained in both hypnosis and sign. This person will be with me for the entire time I participate in this study. I can respond to hypnosis in a way that is comfortable for me. I will also be asked to answer some questions about my experiences.

- I know that the entire procedure will last no more than 90 minutes.

- I know that during the study I will be video-taped. This video-tape will only be used to help the researcher for this study. Those people who will have access to the video-tapes will be the researcher and the three dissertation committee members. I realize that it will not be for public viewing. I also understand that all video-tapes from this study will be destroyed, via erasure, 5 years after the analysis is completed.

- I know that I will not be asked personal information except about my hearing loss. I understand that all information including my experience during hypnosis will be confidential (secret).

BENEFITS AND RISKS

- The benefits of hypnosis research is that it can be a validation of hypnosis as a useful technique for deaf people in therapy.

- I understand that there is a small risk that the experience may be unpleasant, or that I may feel uneasy after the procedure. However experiencing the standard hypnotic susceptibility protocol has been shown to

produce risk of unpleasant feelings comparable to that typical from taking a college exam or from college life in general.

- I recognize that most people have found hypnosis to be a pleasant experience.

CONTACT PERSONS

- I understand that if I have any questions, I can ask the researcher. I know that I can stop and leave at any time. The researchers name is Gail Isenberg and she can be reached at (612) 698-5163, voice and tty. The research is sponsored by the University of Massachusetts in Amherst, Massachusetts.

- Signing my name on this paper is only to show that I agree freely to participate in this study. This paper will be kept separate from other research information so that no one will know how I responded to hypnosis.

Date:_____ _____

write name (signature)

APPENDIX B

SUBJECT DEMOGRAHPIC QUESTIONNAIRE

HYPNOSIS RESEARCH _____

Please answer the questions below. All information will remain anonymous and will only be used for research purposes. Please do not write your name on this paper.

Age _____ Sex _____

(please check the one that most applies to you):
Hearing ___ Deaf ___ Hard of Hearing ___

If you checked deaf or hard of hearing how old were you when you lost your hearing? _____ years old.

How old were you when you learned to sign? _____ years old.

What signing mode do you prefer to use? (check one)

American Sign Language (ASL) ___
Pigeon Sign Language (PSL) ___
Sign Exact English (SEE) ___
Other ___

APPENDIX C

STANDFORD HYPNOTIC SUSCEPTIBILITY SCALE FORM C (ADAPTED) WEITZENHOFFER AND HILGARD (1962)

SCORING BOOKLET: FORM C (REVISED)

To be used in connection with Weitzenhoffer and Hilgard's Stanford Hypnotic Susceptibility Scale: Form C (revised), Consulting Psychologists Press, Inc., Palo Alto, California.

Subject No.....Date..... Total Score.....
Name..... Hypnotist.....

Summary of Scores

Details on the pages that follow	(+ or -)
1. Hand Lowering (Right Hand)	
2. Moving Hands Apart	
3. Taste Hallucination	
4. Arm Rigidity (Right Arm)	
5. Dream	
6. Age Regression (School)	
7. Arm Immobilization (Left Arm)	
8. Anosmia to Ammonia	
9. Negative Visual Hallucination (3 Boxes)	
10. Post-Hypnotic Amnesia	
Total (+) score.....	

Record of Recall in Test for Amnesia

	Order of Mention		Order of Mention
Hand lowering	.....	Age regression	.....
Moving hands apart	.....	Arm Immobilization	....
Taste hallucination	.....	Anosmia to ammonia	....
Arm rigidity	.....	Negative visual hallucination	.....
Dream	.....		

Total number of items recalled .....

APPENDIX D

RAPPORT/RESISTANCE SCALE

Scale A

Experimenter _____

Subject Name _____
Sex _____ Age _____
Group Number _____ (to be filled in by the experimenter)

The following questions are designed to find out your feelings about the hypnotic experience you just had. Please answer the these questions as accurately as possible. Show your answer by circling the number that most accurately describes your feelings.

1. I felt comfortable with the hypnotist.

1	2	3	4	5	6	7
strongly agree						strongly disagree

2. When I saw the suggestions, I felt I had to respond.

1	2	3	4	5	6	7
strongly agree						strongly disagree

3. The hypnotist seemed to understand my feelings and needs in the trance.

1	2	3	4	5	6	7
strongly agree						strongly disagree

4. When I saw the suggestions, a part of me felt resistant.

1	2	3	4	5	6	7
strongly agree						strongly disagree

5. I felt free to respond or not to respond to any particular suggestion.

1	2	3	4	5	6	7
strongly agree						strongly disagree

6. During the trance, I wanted to stay in control of my experience in the trance.

1	2	3	4	5	6	7
strongly agree						strongly disagree

7. Responding to what the hypnotist signed seemed like a natural and effortless thing to do.

1	2	3	4	5	6	7
strongly agree						strongly disagree

8. I knew that I would never respond to some of the suggestions given.

1	2	3	4	5	6	7
strongly agree						strongly disagree

9. Although I did not expect to really go into trance, I was surprised at how well I responded.

1	2	3	4	5	6	7
strongly agree						strongly disagree

10. I thought the hypnotist's signs and manner to be irritating.

1	2	3	4	5	6	7
strongly agree						strongly disagree

11. After the session began, I focused mainly on the hypnotist's signs and my inner experiences.

1	2	3	4	5	6	7
strongly agree						strongly disagree

12. After the session began, I was distracted by the vibrations and/or light in the environment.

1	2	3	4	5	6	7
strongly agree						strongly disagree

13. I thought the experience of trance was comfortable and enjoyable.

1	2	3	4	5	6	7
strongly agree						strongly disagree

14. I could not completely trust the hypnotist.

1	2	3	4	5	6	7
strongly agree						strongly disagree

15. What was your subjective experience of the depth of trance.

1	2	3	4	5	6	7
not at all in trance						very deep in trance

APPENDIX E

SELF-REPORT OF HYPNOTIC SUSCEPTIBILITY

Scale B

Experimenter _____

Subject Number_____

The following questions ask you to rate your own trance experience on each of the suggestions that were given to you. Please show your answer by circling the number that most accurately reflects your experience.

1. As your right hand lowered, did you feel your response of moving it was voluntary or involuntary?

1	2	3	4	5	6	7
completely voluntary						completely involuntary

2. While your hands were together, did you experience your response of them moving apart to be voluntary or involuntary?

1	2	3	4	5	6	7
completely voluntary						completely involuntary

3. When you were asked to experience a sweet taste, how sweet a taste did you sense?

1	2	3	4	5	6	7
not at all sweet						very sweet

4. When you were asked to experience a sour taste, how sour a taste did you sense?

1	2	3	4	5	6	7
not at all sour						very sour

5. While your right arm was extended, did you experience your response of not being able to bend it to be voluntary or involuntary?

1	2	3	4	5	6	7
completely voluntary						completely involuntary

6. As you were dreaming, how much was your hypnotic experience like your night dreams?

1	2	3	4	5	6	7
not at all like night dreams						completely like night dreams

7. When you were asked to experience yourself at a younger age, how childlike was your experience?

1	2	3	4	5	6	7
not at all childlike						completely childlike

8. While your left arm was resting on your leg, did you experience your response of not being able to lift it as voluntary or involuntary?

1	2	3	4	5	6	7
completely voluntary						completely involuntary

9. When your were asked to smell the container, how much of an odor did you sense?

1	2	3	4	5	6	7
very strong odor						no odor at all

10. When shown the colored blocks, how many blocks did you see?

1	2	3	4	5	6	7
saw two or less blocks						saw three blocks

11. Before the sign to remember, how much had you forgotten of the trance?

1	2	3	4	5	6	7
did not forget at all						completely forgot

12. After the sign to remember, how much did you remember that you had forgotten of the trance?

1	2	3	4	5	6	7
no more memories at all						completely remembered

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